

BENCHMARK COMPUTING SERVICES

SOFTWARE CATALOG

JANUARY, 1979

ALL PROGRAMS OFFERED FOR SALE IN THIS CATALOG, UNLESS OTHERWISE NOTED, ARE WRITTEN IN TRS-80 LEVEL II BASIC. MOST PROGRAMS CAN EASILY BE MODIFIED BY THE PURCHASER TO RUN ON OTHER INTERPRETERS.

THE PRICE QUOTED FOR EACH PROGRAM IS FOR A COMPLETE LISTING. A VERIFIED LEVEL-II CASSETTE WILL BE INCLUDED FOR AN ADDITIONAL \$2.00. UTAH RESIDENTS MUST ADD 4.75% SALES TAX. WE PAY POSTAGE ON ALL SALES.

ALL PROGRAMS ARE EXTENSIVELY COMMENTED AND SHOULD BE SELF-EXPLANATORY. ADDITIONAL INSTRUCTIONS ARE INCLUDED WHERE REQUIRED. WE WILL GLADLY ANSWER ALL INQUIRIES CONCERNING THE OPERATION OF OUR SOFTWARE.

BENCHMARK WILL ALSO DO CUSTOM PROGRAMMING IN EITHER BASIC OR ASSEMBLY LANGUAGE. WE WILL WRITE NEW PROGRAMS TO YOUR SPECIFICATIONS OR MODIFY EXISTING PROGRAMS. WRITE FOR DETAILS, DESCRIBING YOUR PROBLEMS AS COMPLETELY AS POSSIBLE.

EACH CATALOG ENTRY BEGINS WITH THE NUMBER, NAME, SIZE IN BYTES, AND LISTING PRICE OF THE PROGRAM. A BRIEF DESCRIPTION OF THE PROGRAM FOLLOWS; ADDITIONAL INFORMATION WILL BE SUPPLIED UPON WRITTEN REQUEST. FOLLOWING THE DESCRIPTION IS AN INDICATION OF WHETHER THE PROGRAM IS INTENDED TO BE USED INTERACTIVELY OR AS A SUBROUTINE IN OTHER PROGRAMS. THE PRINCIPAL PARTS OF THE INTERACTIVE PROGRAMS CAN GENERALLY BE REMOVED AND USED AS SUBROUTINES. PLEASE NOTE ALSO THAT THE SIZE OF THE PROGRAMS CAN BE DECREASED BY THE USER BY REMOVING THE COMMENTS.

***** LIMITED WARRANTY *****

BENCHMARK COMPUTING SERVICES PROGRAMS ARE WARRANTED TO THE ORIGINAL PURCHASER TO PERFORM AS ADVERTISED ONLY. THIS LIMITED WARRANTY IS EXTENDED TO THE PURCHASER FOR A PERIOD OF ONE YEAR FROM DATE OF PURCHASE. FOR REPLACEMENT OR CORRECTION OF A DEFECTIVE PROGRAM, SEND A COMPLETE DESCRIPTION OF THE PROBLEM TO BENCHMARK COMPUTING SERVICES, BOX 385, PROVIDENCE, UTAH, 84332; FOR REFUND OF THE FULL PURCHASE PRICE FOR A DEFECTIVE PROGRAM, SEND ALL LISTINGS AND TAPES OF THE PROGRAM TOGETHER WITH A STATEMENT THAT THE PURCHASER RETAINS NO COPY OF THE PROGRAM IN ANY FORM, POSTAGE PREPAID, TO BENCHMARK COMPUTING SERVICES AT THE ADDRESS STATED ABOVE.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. BENCHMARK COMPUTING SERVICES SHALL IN NO EVENT BE LIABLE FOR CONSEQUENTIAL DAMAGES OR LOSS OF BUSINESS OR ANTICIPATORY PROFITS RESULTING FROM THE USE OR OPERATION OF BENCHMARK COMPUTING SERVICES PROGRAMS. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

DUE TO AN OVERWHELMING LACK OF DEMAND WE HAVE CEASED PRODUCTION OF 8080 AND Z-80 PROGRAMS. WE WILL CONTINUE TO OFFER TRS-80 ASSEMBLY LANGUAGE PROGRAMS.

*** ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. ***

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1001 COMPOUNDED AMOUNT SIZE: 2.4K PRICE: \$5.00

CALCULATES ANY OF THE FOLLOWING PARAMETERS FROM THOSE REMAINING: FUTURE VALUE,
PRESENT VALUE OR PRINCIPAL, INTEREST RATE, INTEREST PAID, NUMBER OF PERIODS. INTERACTIVE

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1002 DEPRECIATION SCHEDULES SIZE: 2.3K PRICE: \$5.00

CALCULATES DEPRECIATION SCHEDULES USING STRAIGHT LINE, SUM-OF-THE-YEAR'S DIGITS,
OR VARIABLE RATE DECLINING BALANCE METHOD. INTERACTIVE.

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1003 DIRECT REDUCTION LOANS SIZE: 4.8K PRICE: \$5.00.

CALCULATES ANY OF THE FOLLOWING PARAMETERS FROM THOSE REMAINING: INTEREST RATE,
ACCUMULATED INTEREST, PAYMENT, PRESENT VALUE, NUMBER OF PERIODS, REMAINING BALANCE.
ALSO WILL PREPARE AMORTIZATION TABLE THAT MAY BE DISPLAYED ON THE SCREEN AND/OR
PRINTED ON A LINE PRINTER. INTERACTIVE

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1004 DISCOUNTED CASH FLOW SIZE: 0.6K PRICE: \$5.00

CALCULATES THE PERIODIC PRESENT VALUE OF AN INVESTMENT GIVEN THE DISCOUNT RATE,
THE AMOUNT OF THE ORIGINAL INVESTMENT, AND THE PERIODIC CASH FLOW. INTERACTIVE.

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1005 SINKING FUNDS SIZE: 2.0K PRICE: \$5.00

CALCULATES ANY OF THE FOLLOWING PARAMETERS FROM THOSE REMAINING: FUTURE VALUE,
PAYMENT, NUMBER OF PERIODS, AND INTEREST RATE. INTERACTIVE.

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1006 FINANCE PACKAGE 1 SIZE: 12.5K PRICE: \$12.00

CONTAINS PROGRAMS 1001 THROUGH 1005

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1007 BOND ANALYSIS SIZE: 6.2K PRICE: \$5.00

CALCULATES THE PRICE OF A BOND PURCHASED ON OR BETWEEN COUPON DATES, GIVEN THE
PARAMETERS OF THE BOND AND THE DESIRED YIELD. ALSO CALCULATES THE YIELD OF A
BOND PURCHASED ON A COUPON DATE. EXAMPLES INCLUDED. INTERACTIVE.

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1008 ANNUITIES SIZE: 4.0K PRICE: \$5.00

CALCULATES PRESENT VALUE OF ANNUITIES WITH EITHER DEFERRED PAYMENTS OR WITH
UNEQUAL PAYMENTS. EXAMPLES INCLUDED. INTERACTIVE

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1009 EQUITY INVESTMENT SIZE: 5.0K PRICE: \$5.00

CALCULATES MORTGAGE CONSTANT, RATE OF RETURN ON EQUITY PORTION OF INVESTMENT, FUTURE SALES PRICE TO PRODUCE A DESIRED YIELD, AND THE PURCHASE PRICE AND REQUIRED EQUITY FOR A TRANSACTION WITH A SPECIFIED YIELD. EXAMPLES INCLUDED. INTERACTIVE.

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1010 MORTGAGES SIZE: 5.3K PRICE: \$5.00

CALCULATES EFFECTIVE RATE OF A MORTGAGE WITH FEES, PRICE AND YIELD OF A MORTGAGE TRADED AT A PREMIUM OR DISCOUNT, AND THE PAYMENTS, CASH ADVANCED, AND YIELD ON REFINANCED MORTGAGES. EXAMPLES INCLUDED. INTERACTIVE.

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1011 FINANCE PACKAGE 2 SIZE: 14.0K PRICE: \$10.00

CONTAINS PROGRAMS 1008 THROUGH 1010.

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2001 FAST FOURIER TRANSFORM SIZE: 5.2K PRICE: \$7.00

CALCULATES THE FOURIER TRANSFORM OF EITHER REAL OR COMPLEX DATA. RESULTS ARE RETURNED BOTH AS COMPLEX PAIRS AND IN MAGNITUDE/ANGLE FORM. THE FOURIER TRANSFORM IS EXTREMELY USEFUL FOR ANALYSING ALL TYPES OF TIME SERIES. THE FFT IS THE BASIS OF THE MUSIC ANALYSIS PROGRAM DESCRIBED BELOW AND IS ALSO INCLUDED IN IT. SUBROUTINE.

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2002 PLANE GEOMETRY SIZE: 4.0K PRICE: \$5.00

FINDS CIRCLES SPECIFIED BY THREE POINTS, POLYGON AREAS, AND ALL PLANE TRIANGLE SOLUTIONS. INTERACTIVE.

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2003 SPHERICAL TRIGONOMETRY SIZE: 4.0K PRICE: \$5.00

FINDS ALL SPHERICAL TRIANGLE SOLUTIONS AND COMPUTES THE DISTANCE BETWEEN TWO POINTS ON THE EARTH'S SURFACE GIVEN THEIR LATITUDES AND LONGITUDES. INTERACTIVE.

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2004 TRIG PACKAGE SIZE: 7.5K PRICE: \$7.00

CONTAINS PROGRAMS 2002 AND 2003.

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2005 ROOT FINDER SIZE: 4.7K PRICE: \$5.00

FINDS ROOTS OF POLYNOMIALS OF DEGREE 4 OR LESS. THIS IS NOT AN APPROXIMATION ROUTINE AND ACCURACY IS LIMITED ONLY BY THE ACCURACY OF THE TRS-80 MATH FUNCTIONS. INTERACTIVE.

2006 NUMERICAL INTEGRATION AVAILABLE SOON

TRAPEZOIDAL, SIMPSON, AND GAUSSIAN QUADRATURE INTEGRATION ROUTINES. A ROUTINE
IS ALSO INCLUDED FOR INTEGRATION OVER AN UNEVENLY SPACED NUMBER OF POINTS. SUBROUTINES.

2007 MATRIX ROUTINES AVAILABLE SOON

ROUTINES TO MULTIPLY AND INVERT MATRICES, FIND DETERMINANTS, SOLVE SIMULTANEOUS EQUATIONS.
VECTOR OPERATIONS (CROSS, DOT, MULTIPLICATION BY SCALAR, ETC.) INCLUDED. SUBROUTINES.

2008 COMPLEX MATH AVAILABLE SOON

ROUTINES TO ADD, SUBTRACT, MULTIPLY, DIVIDE, EXPONENTIATE COMPLEX NUMBERS. CALCULATES
COMPLEX TRIG FUNCTIONS, EVALUATES COMPLEX POLYNOMIALS. SUBROUTINES.

2009 CURVE FITTING AVAILABLE SOON

FITS SMOOTH CURVES TO DATA USING SINGLE, MULTIPLE LINEAR REGRESSION OR POLYNOMIALS. SUBROUTINES.

3001 ASTRONOMY 1 SIZE: 7.9K PRICE: \$7.00

FINDS GREENWICH HOUR ANGLE AND RIGHT ASCENSION OF ARIES, DECLINATION, GREENWICH
HOUR ANGLE, AND RIGHT ASCENSION OF SUN, EQUATION OF TIME, AND SUNRISE AND
SUNSET TIME. INTERACTIVE.

3002 STAR FINDER AVAILABLE SOON

CALCULATES POSITION OF A STAR GIVEN THE DATE, TIME, AND OBSERVER'S LOCATION. INTERACTIVE.

4001 RENUMBER SIZE: 2.0K PRICE: \$5.00

THIS INTERACTIVE ROUTINE WILL COMPLETELY RENUMBER THE LINES IN A BASIC PROGRAM.
BOTH THE LINE NUMBERS THEMSELVES AND REFERENCES TO THEM IN OTHER LINES ARE CHANGED.
USER MAY SPECIFY LINES TO BE CHANGED, FIRST NEW LINE, AND NEW INCREMENT.
THE ONLY RESTRICTION IS THAT THE NEW NUMBERS HAVE THE SAME NUMBER OF DIGITS
AS THE OLD NUMBERS. THE ROUTINE REQUIRES TWO REAL VARIABLE STORAGE LOCATIONS
FOR EACH LINE CHANGED.

4002 SCREEN PLOTTER SIZE: 6.5K PRICE: \$7.00

SUBROUTINES FOR DRAWING GRAPHS ON THE VIDEO DISPLAY. ROUTINES ARE INCLUDED
FOR SCALING ARRAYS TO BE PLOTTED, FOR DRAWING AXES WITH OR WITHOUT TIC MARKS,
AND FOR DRAWING LINES FROM POINT TO POINT. POLAR PLOTS AND HISTOGRAMS MAY BE

CONSTRUCTED. EITHER OR BOTH SCALES MAY BE LINEAR OR LOGARITHMIC. A COMPLETE
SCALED PLOT OF ONE ARRAY VERSUS ANOTHER MAY BE DONE WITH A SINGLE CALL.

4003 LINE PRINTER PLOTTER AVAILABLE SOON

PROVIDES THE FEATURES OF PROGRAM 4002 FOR CREATING PLOTS ON THE RADIO SHACK LINE PRINTER.

4004 A. L. RENUMBER SIZE: AVAILABLE SOON PRICE: \$5.00

ASSEMBLY LANGUAGE PROGRAM TO RENUMBER BASIC PROGRAMS; PROVIDES THE SAME FEATURES
AS #4001, BUT IS NOT LIMITED BY THE NUMBER OF DIGITS IN THE LINE NUMBERS. MUCH FASTER.

5001 BASIC STATISTICS SIZE: 12.1K PRICE: \$5.00

COMPUTES MEAN, VARIANCE, STANDARD DEVIATION, AND STANDARD ERROR OF GROUPED OR
UN-GROUPED SINGLE SAMPLES. CALCULATES REGRESSION AND CORRELATION COEFFICIENTS
OF AN UNWEIGHTED OR WEIGHTED DEPENDENT VARIABLE VERSUS AN INDEPENDENT VARIABLE.
COEFFICIENT ERRORS ARE ALSO FOUND. WILL SMOOTH DATA WITH EITHER A RUNNING MEAN
OR WITH BINOMIAL SMOOTHING. SUBROUTINES.

5002 DISTRIBUTION FUNCTIONS AVAILABLE SOON

EVALUATES AND/OR INTEGRATES SEVERAL COMMONLY USED DISTRIBUTION FUNCTIONS: NORMAL,
F, T, CHI-SQUARE, BINOMIAL, POISSON. SUBROUTINES.

5003 VARIANCE ANALYZER AVAILABLE SOON

ONE WAY AND TWO WAY ANALYSIS OF VARIANCE. SUBROUTINES.

5004 COVARIANCE ANALYZER AVAILABLE SOON

ONE WAY ANALYSIS OF COVARIANCE. SUBROUTINE.

6001 BASIC ELECTRONICS AVAILABLE SOON

BASIC AC AND DC CIRCUIT CALCULATIONS. OHM'S LAW, SERIES AND PARALLEL R,L,C CIRCUITS,
RESONANCE; BASIC TRANSISTOR AMPLIFIERS AND OP AMP DESIGN. BASIC FILTER CALCULATIONS.
INTERACTIVE.

6002 HAM HELPER AVAILABLE SOON

BASIC ELECTRONICS (#6001) PLUS ANTENNA DESIGN, AND A ROUTINE TO CALCULATE THE
ANTENNA POINTING DIRECTION TO A SPECIFIED LOCATION ON THE EARTH'S SURFACE. INTERACTIVE.

7001	MUSIC ANALYSIS AND SYNTHESIS	SIZE: 6.5K	PRICE: \$15.00
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CALCULATES AND PLOTS (IF YOU HAVE A LINE PRINTER) YOUR BIORHYTHM CYCLES GIVEN YOUR BIRTHDAY AND BIRTH YEAR. INTERACTIVE.

ORDER FORM

Mail To:
BENCHMARK COMPUTING SERVICES
P. O. BOX 385
PROVIDENCE, UTAH 84332

NAME: _____	REC'D: _____
APT/BLDG: _____	SENT: _____
STREET ADDRESS: _____	_____
CITY: _____ STATE: _____ ZIP: _____	_____

Please fill in the following information to help us serve you better:

Occupation: _____ Other hobbies: _____
 Computer: _____ Peripherals: _____
 Principal use of your computer: _____
 Software Interests: 8080 _____ Z-80 _____ TRS-80 Machine & Assemb. Language: _____
 Electronics: _____ CB: _____ SWL: _____ Ham: _____ Astronomy: _____ Math: _____
 Science: _____ Statistics: _____ Music: _____ Personal Finances: _____ Business: _____
 Programs you would like: _____

Program Number	Program Name	Unit Price +	Tapes @ \$2.00 =	Unit Total Price

Check ___ Money Order ___ Enclosed (no COD's)
 Charge to Master Charge ___ Visa ___
 Card #: _____
 Expiration Date: _____

Total Price: _____
 Utah Residents Add _____
 4.75% Sales Tax: _____
 Total Order: _____

Signature: _____

BENCHMARK COMPUTING SERVICES
P. O. BOX 385
PROVIDENCE UTAH 84332

ADDRESS CORRECTION REQUESTED

